ELECTRICITY on the FARM

THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

FEATURED THIS MONTH:

- Improving Farm Efficiency
- Christmas in Cedar Valley
- Welders Speed Farm Production
- Milling Whole Wheat at Home
- Irradiation in Egg Production
- Electricity From the Wind
- Electricity Does Brood Turkeys
- Tips on Saving Service Calls
- Sew for Christmas
- Electricity Helps Financially

DECEMBER, 1942

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WARTIME TIPS

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GENERAL ELECTRIC

Editor's Chat

Democracy

Whatever the motive back of the votes we cast in the November election, the results prove that the principles of democracy—supreme power in the people—are still very much alive in this country. Whether we like the results or not, the fact that the people are still supreme should be a satisfaction in this troubled time. Satisfaction? Yes. But also a sobering challenge. Let us study the facts and realities of our democratic life and pray for guidance in the casting of our determining votes—unselfishly—for the general weal. "Praise the Lord and pass the ammunition."

Treadle Bearings

A treadle is something you put your feet on for action to cause the old sewing machine to run. (A motor is better of course.)

A few weeks ago I dropped into the Agricultural Engineering laboratory presided over by Prof. B. B. Robb at Cornell University. It was full of girls in faded blue coveralls. They were using stillson wrenches on kitchen plumbing, sharpening the kitchen knives on electric grinders, and a group of them had a half dozen battered old sewing machines with their "undies" off, giving them oil baths and body massage. They sang while they worked. "B.B." says those girls can take a sewing machine to pieces and put it back into tip-top free running condition like veterans. They know how the needle and bobbin contrive to make a stitch and what the tensions and the groove in the needle are for. They love it.

They start with the treadle. If it works hard with the belt off, or if it thumps when it runs, they clean the joints and bearings and loosen the screws that hold the bearings tight until everything runs free and easy. Then they tackle each of the five bearing adjustment screws and tighten and loosen "jist a hair" until there is neither play nor binding. The whole pedal mechanism is made to run quietly and easily on that old thumper machine. What a thrill! The sewing mechanism comes next; then the performance test. They keep 'em running.

So long as this war lasts, it looks as if we were going to have to clean and adjust the "treadle bearings" to keep our farm electric equipment working for the duration. Many of us can attend farm equipment repair clinics arranged by the county and home agents. We can all read the manufacturer's instructions on care, cleaning and oiling. You'd be surprised at how many folks—even the experts—who permit the motor to wear out or burn out for lack of a few drops of oil. Save what you have or do without for the duration is becoming an unwritten wartime rule. It can be saved.

Winter Scrap

While tramping in the country recently I saw much old worthless steel scrap in farm fence corners and covered with weeds. The nation needs that scrap. The boys in Africa and the Solomon's need it. It isn't a fancy. It's a *fight*. If labor shortage has prevented turning in scrap this fall, the winter let-up may give time. It is still needed. And the fence corners can stand a housecleaning.

Christmas

As this is written, the war news is cheering. Soon our Christian nation will be celebrating Christmas—the birthday of Christ. In many places in Europe the attempt has been made to replace Christ by Hitler. In our holiday celebration and good cheer, let us keep the light burning in our hearts and determination in our actions that all the world may be rid of the Hitler mess and again celebrate Christmas with Peace on Earth and Good Will Toward Men.

—I'm proud I am a farmer!—

Geo. W. Kable

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Our War-Bond Gifts Do DOUBLE-DUTY!

We decided to be *sensible* about presents this year—so Jim and I are giving each other War Bonds—and Susie's used her egg-money for Stamps. For we've two ideas in mind. By helping in the war, we're making sure there'll be *years* of American Christmases ahead. . . . And we're also building a fund for the Hotpoint Electric Kitchen we'll buy when Hotpoint turns from war work to home appliances again.

Someday We'll Have A HOTPOINT ELECTRIC KITCHEN Like . . .

FOR HOMES COSTING $6000

For a $4,000 Home—The Daffodil Kitchen (above), for low-cost farm homes, is equipped with Hotpoint Range, Refrigerator, Sink and Steel Cabinets.

FOR HOMES COSTING $4000

For a $6,000 Home—The Victory Kitchen (above) is complete with Hotpoint Range, Refrigerator, Electric Dishwasher, Sink and Hotpoint Steel Cabinets.

The cost of a Hotpoint Electric Kitchen, including Appliances, Sink and Cabinets, averages about 10% of home-building costs.

Give War Bonds Today... Electric Kitchens Tomorrow

A Hotpoint Electric Range will bring me the cleanliness of electricity. And the natural juices and precious vitamins in our meals will not be cooked away.

Every feature of the big Hotpoint Electric Refrigerator is designed to save. It is built to preserve foods at flavor peak.

Thanks to the Hotpoint Automatic Electric Dishwasher, Disposall and Hotpoint Steel Cabinets, my kitchen will be as modern as tomorrow's news.

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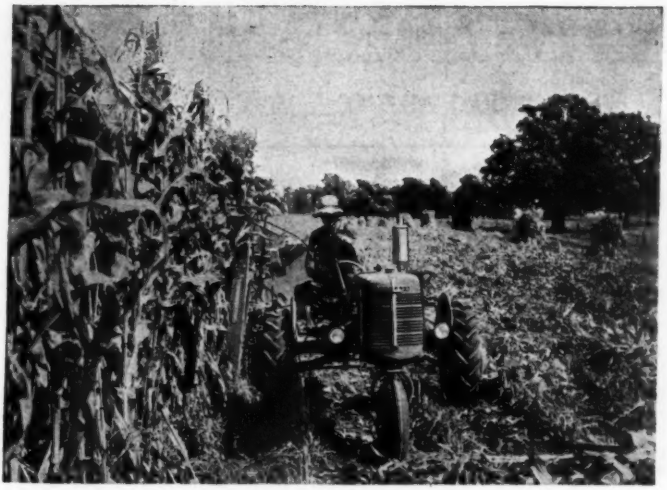

Improving Farm Labor Efficiency

By **PROF. E. W. LEHMANN***

THE outstanding advancements in improving the efficiency of farm labor have been in field production. The modern tractor, along with tillage harvesting tools, has reduced the labor requirement for producing the major crops to only a fraction of that required twenty-five years ago. While the labor requirement for producing such crops as corn, wheat, and soybeans has been cut to only a fraction of what it was previously, there has not been a corresponding general reduction in the amount of labor required in the production of milk, meat, and eggs. Greater attention to labor efficiency in the production of livestock and livestock products is absolutely essential under wartime conditions with a greater demand for these products and with a shortage of labor on many farms.

Electricity is playing a large part and will play an even greater part in improving the efficiency of production where feed and labor are converted into meat, milk, and eggs.

Crop Labor Cut in Half

The effect of the use of modern equipment in reducing the labor required in field crop production is shown by the studies made on a number of Illinois farms by the Farm Management Division of the University of Illinois. During the twenty-five year period from 1913 to 1937 the man-time requirement for the production of corn was reduced from 16.9 to 8.3 hours per acre. The labor requirement for the production of wheat was reduced from 14.2 to 3.6 hours per acre, and for soybeans from 13.4 to 4.1 hours per acre. It is an interesting fact that there were no tractors on this group of co-operating farms at the start of these studies, but by 1936 all of them were equipped with tractors as a major source of power; and equipment such as combines, corn pickers, tractor-drawn cultivators and corn planters were new on these farms.

High Type Enterprise

As a result of the great advances in efficiency of field production where tractors and larger machine units are used, farming has become a high type enterprise in the United States and capable of quick expansion in time of war need.

The power and machinery requirements of any farm must be approached from the standpoint of the individual enterprise, crop, or combination of crops, and the individual job. While crop production is considered as primary production, the production of dairy and poultry products and meats are forms of secondary production which are of even greater importance at the present time. Where electricity is available, dairy farmers, poultry and livestock farmers can all save labor in many ways in their operations, improving the efficiency of production and reducing the cost of the final product. With a dozen or more cows, a milking machine is a real labor saver and will more than pay its way on the farm. The handling, storing and processing of grain for use by the animals can be done more effectively where electrically operated machines are available. Electrical equipment for handling hay, whether it is chopped and blown into the haymow or lifted into the mow with a modern electric hay hoist, may be used to good advantage.

Only a few years ago there were many people throughout the country who criticized the State Agricultural Experiment Stations for emphasizing the need for improving the efficiency of agricultural production. The use of modern machines was objected to because of the social problem which it was claimed would result. With the present war emergency and the demand for food production with reduced labor, and with certain limitations on securing machines, the progress that has been made in improving farm efficiency is now greatly appreciated throughout the world. To meet the war emergency, England and Germany have made more progress in mechanizing their farms during the past four years than during any previous period. The number of farm tractors in England has increased from approximately 50,000 to over 120,000, and the number in Germany has more than doubled. The important thing to remember is that the real objective

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GROWTH OF FARM POWER	1860	1900	1940
HORSES MULES	74,000,000	21,500,000	13,930,000
TRACTORS	—	—	47,023,000
ELECTRICITY WIND ENGINES	—	3,000,000	17,000,000
AUTOS TRUCKS	—	—	155,736,000
TOTAL H.P.	74,000,000	24,500,000	233,689,000
AVG. H.P. PER FARM	3.62	4.27	38.33

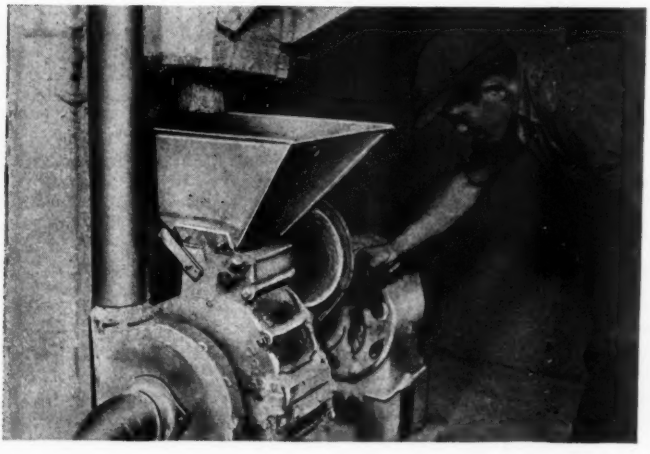
U. S. Census Figures

in the use of any machine is to make it possible for the individual worker to produce more goods to be used by other people as well as by his own family. Whether it is produced in a factory or on the farm makes little difference.

Two questions should be considered in the purchase of machines and equipment for farm production. First, is the purchase justified on the basis of the extent of operation or amount of work to be done; and second, would it be possible and cheaper to hire the work done by someone else. Consider feed grinding. There are many conditions, particularly now, under which it would be more economical to do the grinding on the farm than to have it done in town or by a custom grinder. Home grinding has the additional advantages of less handling of the feed, and a supply of freshly ground feed on hand at all times.

There are certain operations where the economy and convenience of electrically operated equipment is unquestioned. Pumping water is one of these operations. Water is a mainstay of operation on every farm. The automatic feature of an electric water system makes it highly desirable for every farmer. With greater emphasis on livestock production the water supply problem is a critical one on some farms. Existing priorities permit well drillers to continue operations without limitation. The farmer has had no difficulty in purchasing water systems, motors or repairs for motors used for operating water pumps.

Electricity is being used more in pork production both as a measure of saving labor and reducing the loss of pigs. Charles Buck, a farmer in Kankakee County, Illinois, built thirty-two electric pig brooders for use during the 1942 season. Many farmers are finding it to their advantage to use well arranged lots separated with electric fence. The cost of fencing is reduced to a minimum and it saves time when the lots are to be plowed as the electric fence can be quickly removed.



Electricity Aids Poultrymen

On the poultry farm electricity has already proved its worth for brooding chicks, for providing light for winter egg production, for keeping water warm in winter, and improving working conditions. A yard lamp helps protect the poultry from thieves and eliminates many of the hazards of night work. Grinding and mixing feeds is just as important on the poultry farm as it is on the dairy farm.

A separate motor for each power operation is not necessary unless the particular operation is one that must be repeated daily or weekly throughout the year, such as pumping water. The utility, or chore motor, is finding an increasing number of labor-saving uses on farms. A three or five horsepower motor mounted on skids or on a light truck can be used effectively for grinding feed, cutting ensilage, elevating corn, hoisting hay, pumping water for irrigation, and other jobs. Similarly a small motor of a quarter or half horsepower size can be used for many jobs such as turning the grindstone, operating the fanning mill, wood lathe and saw and other shop tools, sausage mill, churn, a concrete mixer, etc.

The greatest value of electricity in the food for freedom program must necessarily be in saving labor in converting of feed into milk and livestock products about the farmstead, and in making the work easier in the home, so the women can devote more attention to field work.

Frozen Foods for Army

The Army Quartermaster Corps has asked for approximately 50,000,000 pounds of frozen vegetables from the 1943 crop for fighting men within the United States.

Christmas Dinner in Cedar Valley

Cedar Valley Folks Have a Pot Luck Christmas Dinner at the Church and Turn a War Gloomy Christmas Into a Celebration of Good Cheer for All the Lonely Ones, and News to Write "The Boys" About.

By **VERA B. MEACHAM**

IN the northern part of our state there is a little valley that stretches back into the hills away from the state highway. The floor of the valley widens here and there into broad and fertile fields. A dozen farms properly call themselves a part of the valley; so do the school, the store, a church, and a few clustering houses built at the cross roads where County Trunk C cuts through the gap in the hills on its way to Highway 12. Its name is Cedar Valley.

Last year the folks up there celebrated Christmas by having dinner together in the dining room of the church. My cousin, Ethel Cranston, told me about it when I stopped in to see her last spring.

"I wish you'd been up here Christmas," she said as we sat in her comfortable kitchen visiting with a neighbor from across the road. "We had just about the nicest Christmas anybody could have in war time."

"What did you do?" I asked.

"Had Christmas together."

"Who did?"

"All of us here in the valley—well, most of us anyway."

"There were two or three families that had sickness. But there were ten families that had someone here," put in Mrs. Thwaite. "Fifty of us all together."

"How did you ever manage to feed that number?"

"Pot luck."

"Pot luck for Christmas! What a grand idea."

"It looked for awhile," said Ethel, "as though we were going to skip Christmas entirely. You know how it was up the valley. Several of the families had boys in camp, one had a son on Wake Island, another in Iceland, and everyone was tense and excited about the war."

"Short sighted, we were," Mrs. Thwaite said. "We needed Christmas more'n ever if we'd only known."

"Then the Fielding's got word that Nan, who is a nurse up in Chicago, was coming home for a few days before she joined up with one of those Red Cross units, and the Talbot boy got his furlough, and young Deneen wrote his folks he was coming home for a visit because his draft number would be coming up before spring."

"Seemed like some of the folks was going to be extra happy," said Mrs. Thwaite, "and some of them just couldn't find any heart for holidaying."

Minister's Wife Steps In

"That's when the minister's wife stepped in," said Ethel.

"You're getting me all mixed up," I protested, "you hadn't mentioned the minister's wife before. What did she have to do with your Christmas?"

"She planned it. We were standing around in the store one Saturday afternoon talking about the children's tree, with the teacher, when Mrs. Turner came in."

"First thing she asked was, 'Have you heard the Talbot boy's coming home?' "

"We had."

" 'And Nan and Tim Deneen?' "

"We'd heard that, too."

" 'Well,' she went on, 'it looks to me as though 'twas a shame to have those young folks come home to Cedar Valley and find we're just so bogged down in a war we haven't much more'n started to fight, that we haven't enough gumption to do something about Christmas.' "

"We all crowded about her," said Ethel, "amused and a little curious, and somebody asked her what she thought anybody could do about it."

" 'I've been studying over it,' she went on as though she had it all planned out. 'If Jack were coming home, I know he'd want to see every last person in Cedar Valley and he'd want to visit with you all. I'd like to write him about everybody and about what we did for Christmas. Seems like I couldn't just write about Reverend Turner and me sitting there eating Christmas dinner by ourselves. 'Twouldn't read like much when the letter catches up with the fleet.' You know her son's been in the navy for a year and more—. Then she brought out her plan. 'I've been wishing we

could all have dinner together down in the church basement."

"All of us, everybody in Cedar Valley?" we asked. "You know that fairly had us stumped. Nobody was willing to say much. We'd never been ones to have our holidays together. We'd drop in and see each other's trees on the way to town, maybe, but eating together was a habit we'd never formed, I guess.

"Then she just told us to think it over, and went off as calm as you please to buy a spool of thread, leaving us watching her, everyone of us with our mouths half open," finished Mrs. Thwaite.

The telephone up that valley kept pretty busy during the next week, Ethel said, and the more folks talked about it, the more they liked it. Mrs. Turner didn't fool anybody talking about that letter to Jack. Her neighbors knew she was wanting everyone on every last little farm up the valley to have something pleasant to look forward to, and to look back on, for Christmas.

Anyhow, by the next Saturday, Ethel went on, the Saturday two weeks before Christmas, all of the women who were in town went over to the parsonage and sat down to plan a regular Christmas dinner for all Cedar Valley.

To hear them tell it, it wasn't much work to get dinner when a dozen women stood ready to help. They had turkeys and a big goose, and chickens, because turkeys and geese and chickens were raised in the valley. Some of them were cooked in big electric roasters and brought to the church still steaming. Mashed potatoes were cooked on two of the burners of the big electric range in the church basement. That left one burner for warming up the canned vegetables and one for the big granite coffee pot, with the oven and warming oven filled to capacity just keeping things warm.

Frozen Christmas Pudding

Alice Ferguson
Home Service Director
Madison Gas and Electric Co.

1½ cups either vanilla wafers or other cookies
½ cup chopped nuts
½ cup chopped dates
½ cup chopped candied peel
grated rind of half lemon
¼ tsp. cinnamon
¼ tsp. nutmeg
8 marshmallows quartered
¼ cup orange juice
¼ cup sugar
½ pint whipping cream.

Dissolve marshmallows in orange juice. Add sugar, mix everything but whipped cream, and combine with orange juice mixture. Fold in whipped cream last. Freeze until firm in paper cups. When you are ready to serve, take off the cups and ice with whipped cream. Decorate with red cinnamon candies and green gum drops for holly. This serves 10.

Snow Man Salad

Put a cottage cheese head on the narrow end of a half a pear. Make the mouth of a speck of red gum drop, and the eyes and buttons of red gum drops, chopped fine. The hair and beard are shredded coconut.

The best bread bakers brought homemake bread. The best pie makers made apple and pumpkin pie. Each of the women brought a little jar of preserves or pickles or cranberry jelly. Whatever she had in her house. Then the 4H Club girls—there were six of them on those farms—spent the morning making snowman salads and helping to set and decorate the tables.

Folks Eat With Their Eyes

"There were some folks who thought 'twas a waste of time to do much decorating," said Mrs. Thwaite picking out another sock from the basket at her side and studying a big hole in the heel. "But I didn't. The hungriest family still eats with its eyes, and dinner ought to look as good as it tastes.

"I can remember how much I loved to have Christmas at Aunt Sarahs because she always had a pumpkin centerpiece. Uncle Timothy made it for her each year, cutting the pumpkin so it looked like a basket with a narrow band of rind left curving over the top for a handle. The hollowed pumpkin was always filled with apples shined to a soft glow by vigorous polishing with a clean dish cloth, with oranges, with bananas, and always across the top, a big sprawling bunch of grapes that trailed down the yellow sides of the pumpkin.

"One year she had pine cone animals, turkeys with brown paper tails, and bunchy nondescript quadrupeds with peanuts for legs and dates for heads. They stood about carelessly among the flat branches of evergreen that the pumpkin sat on. We children all loved them."

Men Proud of Pies

"The men grumbled a little at the whole idea," said Ethel, "but if you watched real careful, you'd see a man pointing out his wife's pie or rolls, and boasting with a little extra pride when he tasted the turkey."

Above: All ready to go. **Right:** The best pie makers brought the pies.

"How could you serve them quickly enough," I asked, "I should think the food would get cold and some of you wouldn't have had dinner till supper time?"

"That was one of the best parts of it. We all ate together."

I know I looked my surprise at that.

"By one o'clock the three long tables were all ready," said Ethel. "The girls had seen to the salads, the boys had filled the glasses, and helped get bread, butter, the milk and cream, and the pickles and preserves on the tables. Then we put a turkey and the goose at either end of a long serving table that had on it plates, the potatoes and other vegetables. Two of the women kept refilling the vegetable dishes so they kept hot; two filled coffee cups, and by the time the line had gone past the turkey we could all sit down and eat. Oh, there was always some jumping up for replacements, but it didn't fall heavy on any one."

* * *

Perhaps you've been thinking about Christmas, not just your Christmas or mine, but Christmas in hundreds of other homes where some of the children won't be coming back this year to trim the tree and raid the cookie jar, to get in late at night and sleep late in the morning, to tease the cat and worry their parents and fill the whole week with noise and gaiety. If you have, perhaps you too can help some group to a measure of holiday cheer by organizing a pot-luck dinner. At any rate doesn't it warm the cockles of your heart just to know that war couldn't black out Christmas in Cedar Valley?

Electric Welder Speeds Farm Production

By HOWARD CLAPPER

FARMING under wartime restrictions and shortages is a job that taxes the ingenuity of every farm operator. Now, more than ever before, it is essential that he keep all his labor-saving tools and equipment in tip-top operating condition, for when some piece of modern machinery develops a sudden unexpected break, work simply stops until repairs can be made. Doubly annoying, and more expensive, is the break that occurs when a number of hired hands are on the job. As a rule, their time goes right on while the owner dashes madly into town to a shop where custom welding is done. Maybe he has to wait his turn at the shop, and hours elapse before the broken parts are mended and work is resumed.

Above: E. J. Logan smiles about equipment in repair. Above right: The welding unit and helmet. Right: Welding in the Logan shop.

This, at least, was the experience of E. J. Logan and Sons of near Williamsport, Ohio. The Logans, who operate "Brookside," a fertile 240-acre farm, specialize in raising potatoes. Last fall, when the potato digger broke down in the middle of a busy day and had to be hauled to town for repairs while the hired hands cooled their heels in the shade, they decided that the place to get welding done was right in their own workshop. Investigation convinced them that an electric arc welder would be best suited to their needs, so they invested in a small welder that operates on 220 volt service, and uses about three kilowatts.

The electric welder has earned a permanent place on the Logan farm, first because of the savings in time, and second because of the savings in dollars and cents. Dick Logan, one of the sons, says that welding jobs that formerly cost a dollar or more can now be done for a cash outlay of about ten cents; and that a wheel repair job (welding loose spokes in a steel hub) which took 15 minutes of his time, cost 4c for electricity (¾ kilowatt) and took 11c worth of welding rods.

E. J. says that the thing which pleases him most is making all minor repairs as they are needed. When it meant a trip to town and a big welding bill, a lot of little things were easily neglected. Now it takes only a few minutes to make the simple repairs which may save a major break later on.

This practical application of electricity is filling a definite need on the Logan farm, as their "production line" works at top speed turning out thousands of bushels of "Victory Vittles"—Spuds to you.

If you have not done so, better clean your spray equipment and fertilizer distributors and see that they are in good working condition. Store any spray materials and fertilizers you may have in a dry, safe place. The materials will not be too plentiful next summer, and the equipment should be in tip-top shape to get the best results from materials used.

Milling Wheat at Home

By C. V. PHAGAN*

ON first thought, milling at home may sound a little bit old-fashioned. If we stop to analyze the problem, however, there are many good reasons why this practice should be encouraged at the present time. Our Government is calling for increased production of various agricultural commodities. Why not go a step further and encourage the processing of more of these products at home or on the farm in order to utilize home labor and equipment to the fullest extent?

One of the big reasons for encouraging home milling at this time would be to cut down on transportation costs. To illustrate: If South Carolina farm families would mill at home only 1/10 of their annual flour consumption, it is estimated that 200,000 freight car miles of transportation could be saved. If the war continues, the transportation problem is bound to become more serious, so after all, home milling may be more important than many of us realize.

Other Advantages of Milling at Home

Milling at home offers unusual opportunities in obtaining the maximum amount of nutritional values at a minimum expense. Nutrition authorities tell us that the less highly grain is milled or refined the more it contributes in minerals and vitamins, particularly in iron and vitamin B_1. The reason why whole wheat flour is so much more nutritious than white flour is that it contains the husk or outer parts of the wheat kernels where some of the most vital mineral and food elements are stored.

From a strictly monetary standpoint milling at home is a profitable undertaking provided, of course, that some sort of mill is available or can be secured for grinding. A bushel of wheat worth, say $1.00, can be converted into more than $2.00 worth of wholesome whole wheat flour. This is figuring on the basis of average retail store prices. By home milling, a farm family can thus more than double the value of its wheat for home use. Cash savings can also be made by home milling of cereals, corn meal, and grits. Many ordinary breakfast cereals sell from 12c to 15c per pound, but by grinding for home use the average cost will be less than 2c per pound.

Materials and Equipment Necessary for Home Milling

Various sizes and types of equipment can be used for milling at home. Both hammer mills and burr mills have been used successfully in preparing flour, meal and other cereal products on the farm. Small hand burr mills, because of their relatively low cost, have been used rather extensively in some sections of the country.

Anyone interested in home milling these days must plan to use equipment that is available because of the increased difficulty in getting new equipment. A regular burr or hammer mill used for feed grinding may be used for grinding whole wheat flour, meal or grits, provided the hammers are in good condition and screens of the proper size are used or your burr mill has sharp burrs. Some varieties of wheat are much better adapted to hammer-mill grinding than others so it is not possible to give any hard and fast rules as to what size screens to use, speed of hammers, etc. Even after the product is ground with hammer mills or burr mills, it may be necessary to use hand sifters of varying degrees of fineness to separate the flour from coarser unground products or to separate the meal from grits, etc. Finer grinding may be obtained by putting the grain through the burrs twice.

The use of small mills for home grinding has at least two distinct advantages. In the first place, a minimum investment is required and in the second place, small outfits usually mean grinding of small quantities at one time which results in freshly ground products containing the maximum of nutrients and food elements.

Motorizing the Hand Mill

On certain types of hand mills it is possible to construct a home-made wooden pulley by which the mill can be operated with a ¼ horsepower electric motor. Such

*Mr. Phagan is Extension Agricultural Engineer, Clemson Agricultural College, Clemson, S. C.

Upper: Sift wheat in a breeze to remove fine dust, grit and other foreign material. **Lower:** Wash wheat thoroughly through several waters and drain.

Left: Spread on a clean sheet in the sun to dry. **Right:** This is a small handpower burr mill equipped with drive pulley and driven by a ¼ h.p. portable electric motor. The wheat should be thoroughly dry before grinding. Putting it through the mill twice will make it finer.

a set-up is shown in the illustrations accompanying this article. A 24-in. wheel on the mill and a 2-in. pulley on the motor gives a very satisfactory operating speed and from tests made there is no serious overloading when the mill is operated for short periods of say, 5 to 10 minutes.

Preparation of Cereal Grains

The first requirement for making good quality whole wheat flour or whole wheat cereal is to have a good grade of wheat that is thoroughly clean. The same applies to corn for making corn meal or grits. Ordinary thresher-run or combine wheat usually contains a certain amount of foreign material that should be removed by sifting, fanning, washing, etc.

The first step in obtaining a good quality whole wheat flour or cereal is, to sift the wheat to remove fine dust, grit or other foreign material. The next step is to put the wheat in a large tub or pan and wash it thoroughly. Immature grains and other light material will come to the top of the water and are easily removed as the water is poured off. After several washings, the grain can then be spread out on a clean sheet to dry in the sun. Stirring occasionally will hasten the drying process.

Treating of Cereal Grains to Prevent Weevil Damage

The treating of wheat or corn to prevent weevil damage is a point that should not be overlooked in storing grain for home milling when cereal grains are kept over to the following year. Treating should be done before cold weather. Entomologists recommend the use of approximately ½ teacup of carbon-disulphide to an ordinary 50-gallon barrel of wheat which would contain approximately 6 bushels. The carbon-disulphide can be placed in a shallow container and set on top of the wheat and then the barrel covered with a fairly tight cover. Carbon-disulphide, being a gas heavier than the air, settles down through the wheat or corn. Small quantities of grain may be treated for weevil infestation by heating for 30 minutes in the kitchen oven at a low temperature (135° F.)

The flour made of whole wheat by home grinding makes delicious bread, muffins, cookies and some kinds of cakes. With a little experimentation, the family will look forward to baking day.

Electric Hands for 60-Year-Olds

We started to electrify our farm three years ago after we had paid off the loan on the new ventilated barn we built for our 30 Jerseys and on the new tractor. Pa and I were almost sixty, and childless, but we had a hired hand, Carl, and a girl, Clara, who helped me. Our main income came from selling butter, eggs and poultry in a nearby town.

We first had our house wired and lights installed in the barn, granary and tool shop. Then we had a water system installed that provided ample running water—hot and cold—in the house. It was also piped to the barn, henhouses and garden. Later, I had lights installed in my henhouse that housed 500 layers. That was a very profitable investment. The eggs laid soon increased considerably, although I continued to give the same feed as before. When the eggs doubled, I had a "FRESH EGGS" sign put up to sell the surplus to passing motorists. I waited on them myself. Soon we were selling all our products to regular customers and at higher prices than before. Soon the demand exceeded our supply.

For two years we used all our savings to buy electrical appliances that would boost production: a milking machine, incubator, brooder and house, a 30-gallon steam accumulator, motor-driven cream separator and butter churn. Fortunately we also borrowed money to buy two refrigerators, a washing machine, vacuum cleaner, and mixer,—all time and labor-saving electric devices. Soon after, Clara got married and Carl joined the Marines, so we had to run our farm without hired help. But thanks to our "wired help" we are managing it.

MRS. FRED A. LINDEMAN
RR 1, Box 246
Michigan City, Ind.

Irradiation in Egg Production

By E. C. SCHUH*

ALMOST everyone has some idea of the important part vitamins play in our everyday lives. The poultry industry has had the importance of vitamins brought to its attention more forcibly, perhaps, than other branches of agriculture. Some twenty years ago attempts to confine poultry indoors to get maximum egg production ran into the snag of high mortality. Then, someone discovered the importance of vitamin D for poultry, and poultry feeding and management practices were revolutionized.

After the value of vitamin D in the poultry diet was discovered there were many new developments in the poultry industry. These developments included all-year production of hatching eggs; all-year brooding; a more uniform egg production throughout the year from fall and winter-hatched pullets and all-year broiler production.

Vitamin D in Three Ways

There are three ways by which vitamin D can be supplied to chickens, namely: exposure to the sun's rays, the addition of fish oils to the poultry ration, and irradiation of the birds with ultra-violet lamps. Hens confined to houses seldom get enough vitamin D from natural winter sunlight. The war is making it increasingly difficult to get fish oils for supplementing our poultry rations. Until a short time ago, ultra-violet lamp units were too costly for the poultryman to use as a source of vitamin D for his birds. Recently, however, an ultra-violet unit which is practical for poultry uses has been developed. I want to tell you about one poultryman's experience in using this new ultra-violet unit on his laying birds and also his hatching-egg or breeder flock.

For the past ten years Mr. George H. Dynes, who operates the Riverview Poultry Farm and Hatchery, has been prominent in the poultry industry in northwest Washington. For six years he was manager of the Mt. Vernon hatchery of the Washington Cooperative Chick Association. During the past four years he has operated his own poultry farm which has grown until he now has about 15,000 laying birds.

Last year Mr. Dynes read of some successful ultra-violet experiments which were run by the Ohio Experiment Station at Wooster, Ohio, and so he decided to try the ultra-violet lamps on some of his birds.

In order to have a check on his results Mr. Dynes used S-4 sunlamps on 1,200 of his 12,000 birds during November, December and January.

Since he grinds and mixes all of his own feed, it was a simple matter for him to see that the 7,000 birds got no fish oil in either the mash or scratch. The only source of vitamin D was from the ultra-violet lamps. One lamp was used to irradiate two pens of 300 birds each. The lamps were hung at a height of three feet over the water trough in each pen. When I asked Mr. Dynes why he hung the lamps over the water trough he replied that practically all of the birds in each pen came to the water trough some time during a two-hour period, and so, by hanging the lamps over the water troughs, each lamp irradiates the maximum number of birds in the pen. Since two hours irradiation a day was enough for each pen, Mr. Dynes found it possible to use one lamp for two pens, each lamp being used in one pen for two hours in the morning and in the second pen for two hours in the afternoon.

No Difference in Eggs

When asked how the birds were affected by using the lamps as the entire source of vitamin D, Mr. Dynes replied: "We could see no difference whatever in either the grade of eggs or the number of eggs from the 1,200 irradiated birds as compared to the birds receiving fish oil as their source of vitamin D. Shell texture from the irradiated birds was just as good as from the fish oil group. Also, the irradiated birds held up in body weight every bit as well as the oil-fed birds. In fact, we were so satisfied with the results of this trial that we immediately started to supply vitamin D to the remaining 10,800 birds with these S-4 lamps. This year we are irradiating our entire flock of 15,000 layers and breeders."

Mr. Dynes also operates his

*Mr. Schuh is Farm Electrification Supervisor, Puget Sound Power & Light Co., Seattle, Wash.

S-4 unit in one of Dyne's laying pens. Unit is hung about 3 ft. above water trough. Man is Geo. M. Dynes.

own hatchery, turning out about 115,000 chicks each season. Last winter some of the birds he used in the sun lamp trial were breeders from which he took hatching eggs in the spring. Here is what he says regarding his experience using ultra-violet lamps on these birds: "The average lay of our breeders was every bit as good as for the 1941 season, when we were using fish oil. Also our average hatch was a little better than for last year. In 1941 we hatched 78% of all eggs set and last year, 1942, we hatched 79 1/3% of all eggs set. Of course, the 1 1/3% increase may have been due to other factors, but at least we know the use of ultra-violet lamps as a source of vitamin D did not lower the hatchability of our eggs."

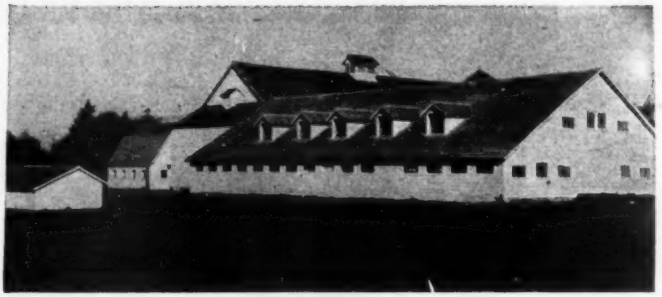
Lamp Labor Negligible

When I asked him how much of a factor labor was in using these lamps Mr. Dynes replied: "The labor in connection with moving these lamps from one pen to another is nothing at all. We just move the lamps when we are going through the pens on our regular rounds."

Assuming a total burning life of 500 hours for these S-4 sun lamps, the operating costs on the Dynes farm was $2.08 per month for each 600 birds. This includes replacement of the bulbs, electricity cost, and depreciation on the transformer and reflector which are necessary parts of each unit. In other words, when he used the lamps Mr. Dynes' total cost for vitamin D was $2.08 per month for 600 birds.

There is just one word of caution to poultrymen who are planning to use S-4 sun lamps as a source of vitamin D, and that is—don't forget that the sun lamp supplies only vitamin D and absolutely no vitamin A. If you have been relying on fish oil to supply part of your vitamin A, then it will be necessary for you to do as George Dynes did and supply additional vitamin A by adding more alfalfa meal or other vitamin A supplement to your ration.

This is one practical poultryman's experience in overcoming the fish oil shortage by using sun lamps. Trials at the Ohio Experiment Station showed that when chicks are irradiated for one hour a day during the first twelve weeks, they develop just as well as birds receiving vitamin D from fish oils. One poultryman in our territory, who is in the business of producing high-grade fryers, has been using this lamp as a source of vitamin D for some time and he reports very satisfactory results.



View of one of Geo. Dyne's laying houses.

Poultrymen using S-4 lamps should remember that to get the full ultra-violet output of these lamps they must be operated at their rated voltage. This means that, in order to get your money's worth, you should not attempt to operate them on long runs of No. 14 wire or on overloaded wiring circuits.

Layer Lighting and Blackouts

Lighting hens to increase seasonal egg production is such a common practice that little is said about it these days. There are some old facts, however, that are worth restating, and some new facts which have a bearing on the economic use of lights.

Lights, either incandescent or ultra-violet, do stimulate hens to increased production. Until recent years the peak price of eggs was reached during the shortest days of winter. Lighting hurried pullets into production and forced hens to extra production during this high-price period. Now, with late winter hatching and better feeding, the price peak is being moved ahead into the fall months. There is still a considerable differential between winter and spring prices, and as long as this exists the lighting of many flocks will be profitable.

This year, when year-around hatching eggs are wanted, there is a different incentive for using lights. It calls for careful planning and management to get best results. For hatching eggs, both hens and male birds should be irradiated. In using lights it should be kept in mind that one cannot force eggs of high hatchability out of hens for an indefinite period. High hatchability and strong chicks come from eggs laid by hens that are on the upgrade. After they reach the peak of production and start down hill the top vigor of the bird is gone and the eggs are likely to produce fewer and less vigorous chicks. When using lights to produce hatching eggs, therefore, the birds should not be lighted until shortly before the hatching eggs are to be saved, and the feeding should be done to keep up the body weight and health of the hens rather than to force production in advance.

Where poultrymen are in regions where practice or business blackouts are likely to occur, they must make provision for blacking-out completely during periods of alarm. This may be done in several ways. Lights can all be turned out. This may play havoc with a high-producing flock, even if the blackout periods are infrequent. Prof. Cosby, head of the Oregon State College Poultry Department, suggests that if both morning and evening lights are used, and an alarm should sound during a lighted period, the light hours might be made up at the other end of the day without . . . . . (More on page 25).

Living room . . . Here's the place your family often gathers after the day's work is done. It *can* be made more *livable* by proper lighting . . . for reading, sewing, study, listening to the radio.

LIGHT UP for better sight in your home

Proper electric lighting throughout your home means reduced eyestrain, better vision for you and your family.

Better vision helps assure the health and vitality needed by farmers today to win the Battle of Production on the food front.

The mere use of *many lights* scattered about the home is not enough. For proper seeing, lights should be well shaded and correctly placed . . . to eliminate glare and to give the right amount of illumination.

Here are helpful hints on better home lighting. They will aid you in getting more things done after dark . . . and in keeping your eyesight fresh and vigorous for the strenuous work ahead.

Bed room . . . Restful lighting is important in bed rooms. A central ceiling light may be used for general illumination . . . with soft, shaded lights on the dressing table. For reading in bed, it is important that the lamp be *right for reading*, not merely decorative.

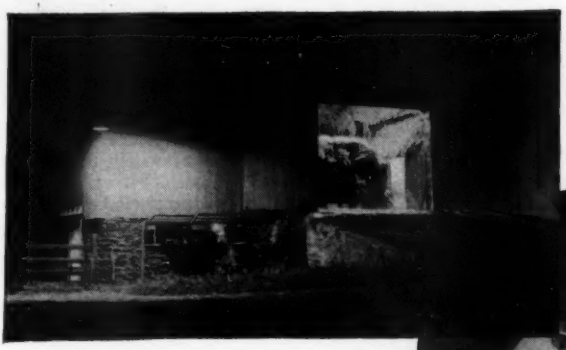
Kitchen . . . Here, in the wife's workshop, the family may spend many pleasant hours, if there is plenty of the *right kind of light*. A ceiling fixture for general lighting . . . sink and work-table lights . . . lights in cupboards . . . these conveniences lighten kitchen tasks for all the family.

LIGHT UP for greater safety and increased production on the farm

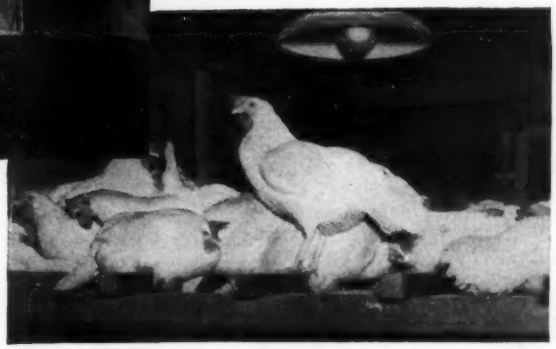
Properly wired, properly placed electric lights in and around farm buildings help to eliminate *two dangers* on the farm . . . the hazard of fire and the possibility of accident through stumbling over obstructions in the dark.

Good lighting also helps you get more things done at night. After-dark chores are easier. Repairs to farm equipment can be made faster and better. All this helps to speed production on the morrow.

In the hay barn, implement shed, cattle barn, and even outdoors, you need enough light to see clearly and safely. But guard against glare by using proper reflectors.



Cow barn . . . Yard lights and interior lighting make easier your task of putting the stock in their stalls after dark.



Poultry house . . . Electric lights in the hen house stimulate egg production in winter, when prices are often highest. Protect against theft, too.

Westinghouse

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☐ Crops ☐ Dairy Cattle ☐ Handicraft ☐ Home Improvement ☐ Poultry
☐ Rural Electrification ☐ Sheep ☐ Swine ☐ Truck Gardening

Name.....

Address.....

Electricity from the Wind

By RALPH J. BUGBEE
Agricultural Engr., Central Vermont Public Service Corp., Rutland, Vt.

VISITORS to Vermont coming into Rutland can see the 110 foot tower of the largest wind turbine generator in the world, standing out against the sky on the crest of Grandpa's Knob, a 2,000 foot "hill" near the town of Castleton. This experimental and apparently practical development looks down on the Hubbardton Battlefield where our ancestors helped forge the new republic.

If you can imagine a structural steel tower 110 feet high, 36 feet square at the base, imbedded in rock and cement to a depth of 23 feet, you can get some idea of the size of the structure. Then to that add 50 tons of mechanism that can rotate 360 degrees on the top of the tower; put on two blades that are each 65 feet long and 11 feet wide and weigh 15,300 lbs. rotate these at a top speed of 28.7 revolutions per minute, and you get a little idea of the immensity of the thing. When the blades are traveling at top speed, the tips are moving at the rate of 180 miles per hour.

Tests on this equipment have conclusively demonstrated that a wind velocity of 18 miles per hour will generate 200 KW, and 30 miles will produce 1,000 KW, which is the designed production. For considerable time previous to construction, wind studies had been made and are still continuing. It is reasonable to expect that the wind at Grandpa's Knob will be satisfactory for about 4,000 hours of operation per year.

Experimental wind turbine with 110-ft. tower and 15-ton blades, 175 ft. from tip to tip. Designed to generate 1,000 kilowatts in a 30-mile wind.

The generator was built by the General Electric Company and is rated at 1,000 KW, 2,300 volts, 60 cycles, 3 phase. A bank of transformers steps this up to 44,000 volts for connection to the lines of the Central Vermont Public Service Corporation.

The big problem has been to control the speed of the wings to maintain a constant speed for the synchronous generator. This is too complicated to describe here, but it has been accomplished. The generator has already produced a considerable volume of kilowatt hours. Like any new project, there have been many "bugs" to overcome but the turbine should soon be in steady use.

This turbine is the result of the vision of Palmer Cosslett Putnam of Boston, Mass., and has been sponsored by the S. Morgan Smith Company, York, Pennsylvania. Associated in the work in technical matters have been nationally-known members of the faculties of Massachusetts Institute of Technology and California Institute of Technology. The bulk of the construction work has been done by the American Bridge Company, The Budd Mfg. Company, and Wellman Engineering Company. The Central Vermont Public Service Corporation has been the "guinea pig" for the test and if successful will incorporate the turbine into its system.

Electricity Helps on Our Farm

Some Additional Letters Submitted in Our July, 1942, War Production Contest

Saved the Berries

"We live on a small farm about five miles from the nearest village. In the summer we have blueberries, blackberries, raspberries, strawberries and cherries which we can or use in jam or jelly. This year, due to the sugar shortage, we could not put up as many as we ordinarily do, so we had to sell them.

"Some of the berries ripened in the best haying weather and they could not be taken to town the same day they were picked. We put the berries in our electric refrigerator over night and the next day they were as good as when they were put in, with no berries spoiled."

LUCILE BIGELOW
Woodstock, Vt.

Electric Sewing Machine Helps Win Prizes

"I am a girl twelve years old and do most of the sewing for mother. It keeps everyone from looking raggy. I also buy material and make most of our clothes. Whenever my sister is in a play, I make a sweet dress for her. The prettiest dress gets the prize. My sister has won the prize every time for being dressed the neatest. I like to sew because we have an electric sewing machine."

RITA MAE SCHATZLE
Box 351, Lebanon Pike
Sharonville, Ohio

Fun with a Milker

"One evening after a hard day's threshing, my father came home and found a salesman ready to demonstrate an electric milking machine. He milked our 20 cows and we got ideas to buy a milker. So we bought it; and it pays because it saves time and hard work. Sometimes I, a ten-year-old girl, milk the cows when daddy is late. It's just fun with a milker. I'd never think of it by hand."

ALICE LINGIS
RR 1, Box 50, Crete, Illinois

SAVE SERVICE

Many service men are now in war service. Before you call on a service man's time and tires, make certain the trouble is not something which you can correct for yourself. A little extra attention these days in keeping equipment clean, oiled regularly but not too much, connections tight, cords repaired, will pay dividends in longer life of equipment which cannot be replaced and will save you trouble and expense.

"Equipment inspections and clean-ups rarely require copper and other hard to get materials, whereas breakdowns most usually do."—C. P. Wagner, Minn.

"Check your fuses when electrical equipment does not work. Have an ample supply of the proper size fuses on hand. It is helpful to have a chart showing what section of the wiring system each fuse protects. Paste the chart on the fuse box.

"Take small appliances to a repair shop when you are going to town on other business rather than to call a service man.

"The refrigerator service man makes many unnecessary calls to level a refrigerator which is vibrating, tighten or replace the fan belt, put on a drop of oil to stop a pulley or motor squeak, or adjust the temperature controls. Read the manufacturer's instructions.

"The most common service call on ranges is 'the oven will not heat.' In nine cases out of ten, the user has failed to reset the timer to manual operation after using the oven automatically; or the oven units have been removed for cleaning and have not been replaced correctly. If the oven pilot light does not light it usually only needs tightening. If the utility outlet on the range does not work, the trouble is usually a burned-out fuse (in the range).

"Low voltage complaints could often be avoided if the customer would bear in mind that when appliances are added from time to time he may have to put in larger sizes of wire to carry the load."—R. K. Derry, Ohio.

"If motors fail to 'pick up,' your circuits may be overloaded. Until wires can be replaced, it might be desirable to turn off the water pump when the milking machine is in operation, especially if both are on the same circuit."—Morris Lloyd, N. Y.

Make It Do for the Duration

1. Don't overload your washer with either clothes or water—follow the manufacturer's instructions.
2. Drain washer immediately following each washing. Rinse tub with clean, hot water. Remove agitator or suction cups. Clean lint trap. Then wipe everything dry with soft cloth. Leave cover off until all dampness is gone.
3. Release pressure on the rolls. Wipe rolls and wringer frame dry.
4. Wipe connecting cord dry and coil on rack, if provided, or place in tub.
5. Cover with cloth when not in use, if in dusty place.
6. If washer is stored in a cold place, always warm it by placing hot water in the tub or by letting washer stand in a warm room for an hour before using.
7. Follow manufacturer's oiling instructions.
8. Keep water off the motor and electrical connections. Chipped porcelain tubs may rust and stain clothing. Be careful.—Ohio Public Service Co.

If a deep well pump gives a weak flow of water the trouble may be in a failing water supply and not in the pump. To determine whether the well is weak, run the water being pumped back into the well casing. If the delivery is then regular, the trouble is a weak well.

These are short days. Clean lamp bulbs may give 25 to 50 per cent more light than dirty ones—and at no extra cost.

Dirt and chaff in motors makes windings heat and burn out.

Stir the Air to Save Heat

In radiator or stove heated rooms, and to a lesser extent in furnace heated rooms, warm air banks at the ceiling. In some rooms there may be as much as ten or twenty degrees differential in the temperature at the floor and at the ceiling. The heat is in the room, but it is not down where it will keep persons warm who are sitting in the room. This winter, when oil is rationed and when rail and road transportation is taxed and farm wood-cutting labor scarce, it may pay to get that heat down off the ceiling. Modern air-conditioning heating systems having blower circulation keep this air stirred up so it does not stratify. When there is no forced circulation of air, the warm air can be brought down with ordinary fans. The fan may be placed near the stove or near the center of the room and directed upward; or it may be placed by radiators or in front of windows and pointed up toward the ceiling. This takes the cold air from the floor and throws it to the ceiling, setting up a circulation in the room. A little experimenting will locate the best place for the fan. Do not turn the fan so a breeze will be directed on persons in the room as the breeze may evaporate moisture from the skin, causing one to feel cool, even though the air is warm.

The United States is now self-sufficient in potash. We used about 580,000 tons in 1942. It sells for about $25 per ton. Formerly it was imported largely from Germany. It went to $500 per ton in World War I.

SHARE
Your Christmas Giving
With
The Salvation Army

WRITE
The Salvation Army
Into
Your Will

Electrical Housekeeping

Edited by **GAIL MEREDITH**

Sew for Christmas

By **MARY MARGARET LYNCH**

MAKE your sewing machine your ally, when you plan your Christmas gifts! A small amount of money, plus imagination and a few hours spent at your machine, will supply an appropriate present for every one on your list. And if the machine you use is a modern electric one, the sewing will require little effort on your part, for the motor will do the work.

Gifts for the Girls

Do you know any college girl who would not love to have a corduroy lounging robe, and rayon crepe pajamas in a matching or contrasting shade? Hunter green might be a practical color for the robe and the pajamas would be very dashing and effective in Chinese red or bittersweet, a red with an orange cast. This robe and pajama ensemble would cost at least twelve or fifteen dollars ready-made. Made at home, on your own electric sewing machine, it will cost about $4.80. This covers the cost of the patterns and a good quality of corduroy and crepe.

Pajamas might also be a thought for the men of the family, perhaps flannelette ones, since our houses may not be so warm this winter.

The high school girl will like something she can wear to school, and if you make her an outfit or a gadget so attractive that it will start a fad—well, daughter's going to be a happy girl! Why not make a navy blue woolen or corduroy jumper for her, edging it around the neck and armholes with braid or a crocheted border in bright red or light blue? Jumpers are easy to make, with only a few darts and the shoulder and side seams to run up on the machine. If you make the jumper, you might add zest to the outfit by adding a "beanie" and pocketbook of felt. The felt can be bought by the yard in any department store, but the easiest method of making a "beanie" is to cut down the crown of an old felt hat, until there is only a skullcap left. Scallop the edges if you like, and crochet an edging around the scallops to match the trimming on the jumper. Finish the "beanie" by crocheting large knobs on a pair of corsage pins, which are used for decoration and to keep the "beanie" anchored to the head.

The easiest way to make a small purse is to cut two circular pieces of felt, insert a zipper by stitching it in with the cording or zipper foot on your sewing machine before you stitch the two circles of felt together, and then finish the edges with an edging of crochet to match the hat. Oblong pocketbooks are cut in the shape of an envelope, with a triangular piece for a flap. The sides are stitched together by machine, and the flap may be caught down by a snap which is concealed by an ornament. If you do not have a zipper for the bag, make a small separate change purse which can be slipped inside the larger pocketbook.

Now that we are carrying so many bundles to save tires and gas, you might like to run up something unusual in the way of a shopping bag, for a Christmas gift. Monk's cloth would be a good material to use, since it comes in natural and bright colors, and is as strong as burlap but not so coarse. Line the bag with gay chintz for color and added strength, stitch the lining and bag separately and then join them at the top. The bag may have one or two handles. A simple trimming could be a border and monogram done in cross-stitch. A monogram adds a very special and personal touch to any gift.

Bedroom accessories are always useful. They can be luxurious and they are the perfect answer to the problem person on your list who "has everything." Turn your thoughts (and your sewing machine) to such things as closet fittings. Pockets for shoes are easy to make and a smartly tailored set of shoe-bag and match-

laundry bag will always be welcome gifts, especially if you are careful to select a color and material suitable for the room in which they are to be used. I know one woman who went so far as to make all the accessories for her college daughter's bedroom for a Christmas present. The footboard of the old brass bedstead was removed and the headboard was covered with a chintz slip-cover. A bedspread, curtains and a skirt for the home-made dressing table were made from the same flowered chintz. The effect was fresh and sparkling, and the entire cost for redecorating the room was less than the price asked for a not-too-attractive rayon bedspread.

Copy "Classy" Things

If you want to see how much the ability to sew is worth in actual savings on accessories made at home, you should walk past the show windows of the smartest stores in your nearest city. Little trifles of underwear, machine stitched and trimmed with a bit of handwork or piping in a contrasting color, sell for three to five times the cost of the material and labor. Luncheon sets which sell for three to five dollars could be made at home for a dollar or two. These things sell in the shops because they combine beautiful colors and materials in an unusual or striking manner—not because they are difficult or impossible to copy. I saw a large tablecloth made from two widths of yellow linen, seamed together down the center. The tablecloth was bordered with a band of dark gray linen, turned to the right side and used as a facing. The only decoration was a design of wheat stalks in each of the four corners of the cloth, traced on the material and stitched in a heavy gray thread on the yellow linen. This design was repeated in the corner of each of the matching napkins. The price of the cloth and napkins was sixty dollars! It could be copied in linene for three or four dollars. Since a cloth of this type is hardly the thing you would select for a "little" gift, you may decide to reduce it to a bridge set of a small cloth and four napkins. Your electric sewing machine can stitch that up for you in an hour.

And while we are on the subject of Christmas presents, why don't you drop a hint for yourself? Have you seen the buttonhole attachment for your sewing machine? Have you operated it? I have a dress with twelve buttonholes, beautiful buttonholes. I can say it without boasting; the sewing machine made them! And I give you my word that I made them in less than thirty minutes. If you want a Christmas present to make you happy-forever-after, mention a buttonhole attachment for your sewing machine, in your next letter to Santa Claus!

How Electricity Has Helped Us Financially in 1942

(September Contest Letter)

Because of the farm-labor shortage I decided early in 1942 to get my mother and daddy to cooperate in plans for a wider use of electricity. Which meant a cheaper use of it, too.

The most helpful addition this year has been the water system, which has brought water into the house, yard, garden and barn. This water helped us raise several hundred chickens with our home-

RUNNING WATER Means Better Protection for Milk and Cream!

To maintain high quality of your milk and cream is not only a wartime duty but a fundamental necessity if you are going to make dairying pay. One basic way is to use water liberally. If you are the lucky owner of a Myers Water System, don't hesitate to work it overtime. It is built to "take it." Use its extra capacity for adequate cooling; for cleaning equipment thoroughly; for flushing barn and milk house floors, as well as for supplying ample water to your stock.

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Send your new repair and maintenance book and name of your nearest dealer.

Take Off Your Hat To The MYERS

Name .....

Address 35W82

made electric brooder. These alone have enabled us to buy several defense bonds.

The laundry is now done at home in an electric washer and pressed with an electric iron. Here again the electric water system was helpful.

Our refrigerator has saved left-over foods; this means less cooking, less food used, less effort in preparing and serving a meal: with more foods for canning. Salads and desserts can be made and chickens can be dressed in advance of week-ends or special occasions.

We find we can save gas and wear of our tires by the electric radio and fan or "chill-chaser" (as the case may be), which has proven a genuine pleasure in the evenings and at leisure time. Many of our neighbors who are saving tires and seeking recreation, resort to our radio for programs of special interest—particularly the news.

An electric sewing machine makes it possible for mother to sew and mend when she would be too tired if it were a "treadle" machine. Her own clothing is cheaper, fits better, and is repaired easier; also papa's and my clothing will last longer with a "stitch in time." Thus we can save money and clothing for the boys in the armed forces.

We find electric fences easier to put up, require less time, money and wire, and they have been a real asset on our farm.

I find I can keep the cars cleaner, and also clean many of the farm seeds with the vacuum cleaner. It does lovely spray paint jobs as well as the many tasks mother puts it through.

For the summer vacation we planned our trip and took all the farm food we could with the "much treasured" hot plate and toaster. As we did not make reservations for a cottage with a kitchenette, we were not able to get one of that kind so the appliances were as though a fairy godmother had sent them. For a small fee they saved many dollars during the three weeks. We find that the hot plate is equal to another stove in canning season, too.

At the end of a hard day's work nothing can take the place of a good light to read or study by, after a hot bath. These lend themselves readily to a sound night's sleep. I would say electricity has gotten our farm work done better, faster and with less cost; has helped us to live better and be healthier, wealthier and wiser.

(I am now the proud owner of $100 worth of Defense Bonds. Am 15 years of age and spent all my life on a farm and go to a consolidated school.

EDWARD CLAXTON BLACKMON
Whitehaven, Tenn.

Coffee Insurance

Experiment with one grind after another until you find which one makes just the kind of coffee your folks like best. Since coffee is a highly perishable commodity, be careful not to let opened packages of it stand around on your shelves until it loses its flavor. Use enough coffee; measure it carefully; time the brewing by the directions on your coffee maker. The fine flavor of coffee escapes quickly so if you want to enjoy it to the full serve the coffee as soon as it is brewed. Make just the amount you are going to use. Wasting even half a cup seems too bad. If there should be one left, try using it in a chocolate pudding or a mocha frosting, —if you're making frostings.

Coffee Makers, Glass

Handle the bowls of your coffee maker gently. Spare them sudden temperature changes,—like putting very cold water in a hot bowl, or boiling water in a cold one. These bowls are made of heat resistant glass, but sudden changes like this may break them. Be sure that the outside of the lower bowl is wiped dry when you put it on the stove, and be careful not to boil all the water away and leave this bowl dry while the coffee is brewing.

The bowls and gasket are designed to fit together without much pressure. If you push them in too hard, you may have difficulty separating them when the coffee is brewed. Be careful putting in the glass rod filter or the strainers. Your coffee maker is a sturdy utensil, but you'd better give it the respectful care you accord any other glass.

Metal

There is a special way of cleaning metal coffee makers that helps to keep them sweet. Every once in a while put a tablespoon of baking soda into the pot, add water, and plug in the coffee maker just as though you were going to make coffee. This will,

they tell us, remove all traces of oil absorbed by the metal.

Cleaning

Nobody can make good coffee without a clean pot. And coffee pot cleanliness means scouring, and scalding, and sunning to get every bit of coffee out of the seams, spouts and lids. To keep them smelling sweet and clean, scour the pot each time you use it. Scour the cover, brush out the spout, poke into every hard-to-get-at spot with good hot suds. Scald all of the pieces thoroughly and let them dry before you put the coffee maker together. On bright days, at least once a week if you use your coffee maker regularly,—let the parts stand in the sunshine a while as further insurance that a clean sweet utensil will be doing its part in making your coffee perfect.

Portable Heaters

Your portable electric heater needs very little care. You should keep it free from dust and guard it from mechanical injury. The heat comes from wires in most heaters, and a wire will break occasionally either through accident or just many hours of use.

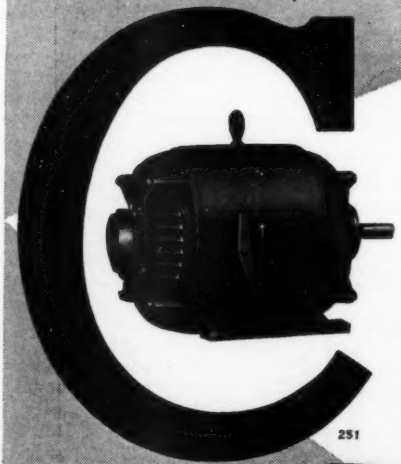
If you can take the heater to the dealer who sold it, he may still be able to replace the broken element with one of the same make. That will insure its having the same voltage and wattage as the original, and will give it a new span of usefulness.

It is very likely that you will use your heater in the bathroom as much as in any other room in the house. Plug it in, if you can, so it will be far enough from tub or lavatory to make it impossible for anybody sitting in the tub to reach out and shift the heater so it will send its warmth on him more directly, or for anyone washing at the lavatory to stoop over and move it. In fact it would be just right if you could set it so it would be impossible for anybody to touch the heater while any part of the body is in contact with water or piping. Some people have been killed by handling electric appliances that had defective wiring while they were in the bath tub.

This is typical of many electric heaters now in use. It combines an electric heating element just inside the grillwork and an electric fan behind the heater. The fan not only blows out the warm air, but it helps circulate the air in the room and keeps the heating element cooler, prolonging its life.

Faced With a Labor Shortage?

Do the hard jobs easier, quicker, with CENTURY MOTORS



● Century high torque RS Motors are more important than ever right now when many rural areas are faced with a shortage of labor due to the demands of war. They'll perform those hard jobs faster, easier, and with better results.

Century Type RS, repulsion start induction, brush lifting, single phase motors have exceptionally high starting torque (turning effort). That means they start a tough load easier, require less starting current, and produce least light flicker. They're ideal for practically all farm use.

For a most dependable, economical source of power on your farm, specify Century RS Motors on the equipment you buy. See your nearest equipment dealer or write direct for complete information.

251

One of the Largest Exclusive Motor and Generator Manufacturers in the World.

Century MOTORS

CENTURY ELECTRIC COMPANY

1806 Pine Street St. Louis, Missouri

Offices and Stock Points in Principal Cities

By **JEROME J. HENRY**

Ships That Pass in the Night

Garry Moore, wacky Emcee of the "Show Without a Name," shares an office with—of all people—H. V. Kaltenborn, the dean of the news commentators.

The two have yet to meet.

Garry's early morning show enables him to leave by 3 o'clock in the afternoon, and Kaltenborn arrives after that for his evening newscast. They obligingly take phone messages for each other, and constantly leave notes.

The World Grows Smaller

Upton Close smashed his car recently while on his way to take part in the "News of the World" round-up. He phoned the studios (in Hollywood), but the network producer wasn't worried.

The producer merely advised Robert St. John (7,000 miles away in London) to introduce someone in Washington instead of Close.

It is to care for incidents such as these that preparedness such as this is practiced by the radio: "The March of Time" recently spent two half days rehearsing a six-minute scene, including full cast, sound man, et al. Came air time and the scene was scrapped. Just a standby program in case a foreign pick-up didn't come through!

Ginny Is a Farm Girl at Heart

Ginny Simms, star of the popular show "Johnny Presents Ginny Simms," is really a country girl at heart.

Although one of Ginny's greatest thrills came when she was invited to lunch with the President and Mrs. Roosevelt at the White House after the President's Ball in 1940, still, for day-to-day life, she's a lady farmer, even though she is a radio and motion picture star.

At Northridge, California, in the San Fernando valley, Ginny owns and operates a 40-acre farm.

Rocketing to the top in radio shows is "Johnny Presents Ginny Simms." It is heard each Tuesday night at 8 o'clock in the evening, Eastern War Time; and as the title would lead one to suspect, sunny Ginny Simms is the main attraction. She is both master of ceremonies and star performer of the show.

She lives there with her mother and father, who help her make farming pay. The crops are largely alfalfa and citrus fruits, and the stock and poultry includes nineteen cows and more than a thousand chickens.

Levant Wants to Play the Piano

Nothing irritates Oscar Levant so much as the fact that a large part of the public wants everything from him but the accomplishment which he cares about most!

"Yeah," he once roared at his editor, "movies, radio, Broadway popular songs—and now books! You guys want me to do everything but my own racket. Do you know what I am?" he wailed. "I'm a concert pianist."

Oscar, whose levity and practically inexhaustible knowledge of music do yeoman service on the "Information Please" program, is, in truth, among the best of the

Nothing Takes the Place of

HOT WATER

DON'T WASTE TIME! lugging hot water to utensils . . . or utensils to hot water. That slow and inconvenient way is NOW a thing of the past!

FREE BOOK "The Magic of Hot Water." Send for it!

When and Where You Need It!

Remember! Hot water is absolutely essential to CLEAN MILK. Ask your milk inspector! Don't skimp with hot water when you can have an ABUNDANCE of it, ALWAYS, right where you need it, at Small Cost. Nothing in years has made such a hit with American dairy farmers as the

SURGE DAIRY-MAID WATER HEATER

It protects their Milk Checks with less effort and less expense. Low wattage heating, automatic control and heavy insulation keep operating costs amazingly low. Needs no pressure or expensive installation. Just plug it in! Write for Catalog now!

BABSON BROS. CO.
2843 West 19th Street, Dept. 5519, Chicago, Ill.

One of America's great news analysts, Raymond Gram Swing, joins the commentators of the National Broadcasting Company in September. Before turning to radio in 1934, Swing had 21 years of experience as a news reporter.

American concert pianists. He was soloist for the all-Gershwin "Telephone Hour" concert recently, and is the pianist for several albums of recordings of Gershwin favorites. Levant was a friend of the late, great American composer, and is rated as outstanding interpreter of his works.

A Little Girl Who Is Heard, but Never Seen

Tommy Riggs' little girl, Betty Lou, unlike the well-behaved child of tradition, has always been heard and never seen. She is one radio star who is just a picture in anyone's mind.

Betty Lou and Tommy Riggs formed that partnership in an emergency. That was in 1932, and they have been together ever since. Tommy had been playing vaudeville and radio with a partner. One day the partner was carried to the hospital for an emergency operation. Tommy had to carry on alone. He used a little-girl voice, and found he had a brand new act.

In England, women who have enlisted for farm work are called "land girls."

★ *Buy War Bonds* ★

Quarter Horsepower Drag Saw

In November, 1941, an article was published in ELECTRICITY ON THE FARM about a one-quarter horsepower home-made drag-saw designed by Prof. Sharp of the University of Tennessee. Readers in the Pacific Northwest, the home of the drag-saw, read the article and said it could not be done with a ¼-hp. motor. But somebody did do it, and the little saw worked so well on the logs of Washington that the Puget Sound Power & Light Co. put one of the saws at work in their different show windows actually sawing logs. More than twenty-five of the saws have now been built in the territory. Mr. Wildebour of the power company reports that logs as large as 46 inches in diameter have ben cut. The outfit is made from a 2"x6" supporting the motor and an old front automobile wheel to which was attached a crank operating a 4 to 6-foot, one-man cross-cut saw. It is home-made, using mostly scrap materials.

SAVE with this VICTORY RECIPE by

Sunbeam AUTOMATIC MIXMASTER

THE BEST FOOD MIXER MADE

No wartime restrictions on

DELICIOUS PLUM PUDDING

Plenty of apples, raisins, currants—and molasses substitutes for sugar. Made quickly . . . easily . . . economically . . . the Mixmaster way.

INGREDIENTS: 1 cup chopped suet, 1 cup chopped raw apple, 1½ cups seedless raisins, 1 cup dried currants, 1 cup molasses, 1 cup cold water, 3 cups sifted all-purpose flour, ½ teaspoon salt, 1 teaspoon soda, 2 teaspoons cinnamon, ½ teaspoon allspice.

METHOD: Combine suet, apple, raisins and currants, molasses and water in large bowl. Beat at No. 1 speed until blended. Sift together flour, salt, soda, and spices. Add to fruit mixture a small amount at a time, mixing at No. 3 speed. Fill greased pudding molds two-thirds full. Cover tightly. Steam for three hours. Serve hot with lemon or hard sauce. Serves 10.

'Dial' YOUR FAVORITE RECIPE

Only Mixmaster has the exclusive MIX-FINDER Dial on which all the everyday mixing needs are plainly indicated. You simply "tune in" the recipe. And you know the results will have that "success secret" of delicious food—even, scientific mixing. Higher, lighter, velvety-textured cakes . . . creamy-fluff mashed potatoes . . . smooth-as-silk icings, sauces . . . more juice from the same oranges.

There have been no Mixmasters manufactured at the Sunbeam factory for several months. However, your dealer *may* have one that was made before war production replaced Sunbeam appliances for the duration. Why not ask him? If he hasn't—buy a War Bond *now* for your Mixmaster *later*.

CHICAGO FLEXIBLE SHAFT CO., 5600 West Roosevelt Road, Dept. 30, Chicago, Illinois

Questions and Answers

Pulley Sizes

▶ **Question:** *In your October issue, page 11, you show a sausage grinder with motor attached. Writer has 1/6 and ¼ hp. motors which he would like to attach to a No. 22 Enterprise grinder for home butchering. What size pulley will be needed on the grinder? Motor has a two-inch pulley. Has also a feed grinder for shelled carn, oats, etc., for chicken feed. What size pulley should turn it at a moderate speed?*

C. G. Z., Wis.

▶ **Answer:** For satisfactory operation with your ¼ hp. motor your sausage grinder should turn not more than about 60 revolutions per minute. That would require entirely too large a pulley to use without a jackshaft. I would recommend that you use a jackshaft having a 12 in. pulley to connect with the motor and a 2¼ in. pulley for driving the grinder, which would be equipped with a 16 in. pulley. This would give you between 50 and 60 r.p.m. The grinder shown in our October issue was driven by a ½ hp. motor.

If your feed grinder is a small one with 4 in. burrs, I would recommend a 16 in. pulley to use in combination with the 2 in. pulley on your motor.

Reclaiming Tires at Home

▶ **Question:** *Please tell me how I can melt rubber in old tires and mold it over again for use as solid tires or solid cores for tire casings.*

H. E. A., Conn.

▶ **Answer:** I regret that I cannot give you a method for reworking old tires into new shapes. The process of reclaiming old tires involves grinding them very fine, then treating them chemically and washing and drying the rubber; then screening out metal particles and removing iron and steel with magnets, then treating with special solvents. There is no simple method of revulcanizing which could be done at home. Also, the Government needs that scrap rubber badly.

Heater for Pig Brooder

▶ **Question:** *Please give me the size and length of resistance wire required for a 100-watt heater in a 16" x 30" pig brooder. I have various lengths and sizes of nichrome wire.*

C. B. D., New York

▶ **Answer:** Without knowing the size and actual resistance of the wire which you have on hand, I cannot tell you what length would be necessary to produce 100 watts of heating in your pig brooder. If you use No. 19 nichrome wire, which is the common size used in soil heating cable and other similar installations, you would need 265 ft. to produce enough resistance to get your wattage down to 100. This evidently would be impractical in the small space you have. If you use No. 22 nichrome wire you would need about 140 ft. The wire would have to be coiled to get that much in a small space. It would probably be cheaper and better to use four 25-watt lamps with proper reflecting surfaces behind them.

Home Plant or High Line?

▶ **Question:** *I bought a farm in April of this year which I proceeded to convert into a commercial poultry farm. This involved a considerable amount of remodeling of buildings, etc. In my ignorance about such reconstruction and operations, I neglected to make application for electricity until a freezing order went into effect, preventing any more electric hook-ups for the duration, so far as I know.*

My application is in Washington and because of "retroactive" features in the regulations governing same I am entitled legally to have it approved, yet it's been delayed beyond all reason.

Could you advise me what other methods are available for electrification on the farm. My peak load requirements would be close to 5,000 watts, and I would prefer a 110-volt system. .. ..S. E. L., New York

▶ **Answer:** If there is any chance for you to have high line service extended to your farm, I would suggest that you keep working at it and if you are turned down—apply again. If your farm is to produce crops needed for war, then it would seem that you would be justified in getting service providing it is not definitely ruled out under the war restrictions.

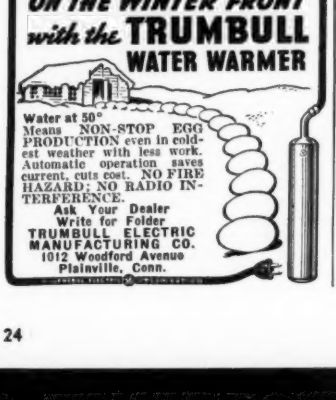
Before the war there were a number of companies making individual generating plants. I am not sure that any of these are available at the present time. If they are, you would probably need just as high a priority as you do for the power line. There is this also to take into consideration; the cost of generating electricity with a small plant, taking interest and depreciation as well as fuel into consideration, is nearly always much higher than the cost of high line service. After the plant is used for several years it will also start giving you a great deal more trouble.

Thawing Pipes in Ground

▶ **Question:** *Will you please send us information on the method and equipment for thawing small water pipes in the ground? If any special equipment is needed, will you please send us the name of the manufacturers?*

Cl. Electric Co-Operative, Mich.

▶ **Answer:** The electric pipe thawing equipment used by plumbers and others is similar to or may actually be electric welding outfits of either the direct or alternating current types. These outfits give high heating current at a voltage which is low enough to be safe to handle. One electrode from the welder is connected at one end of the frozen section and the other electrode at


SPEED EGG PRODUCTION
ON THE WINTER FRONT
with the TRUMBULL
WATER WARMER
Water at 50°
Means NON-STOP EGG PRODUCTION even in coldest weather with less work. Automatic operation saves current, cuts cost. NO FIRE HAZARD; NO RADIO INTERFERENCE.
Ask Your Dealer
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Monarch
ELECTRIC
and
COAL-WOOD
COMBINATION RANGES
Today's most popular "high line" range: electric on one side—coal or wood on the other. Provides year 'round kitchen comfort.
See a MONARCH outlet or —
Write for booklet illustrating complete line.
MALLEABLE IRON RANGE CO.
1242 Lake Street
Beaver Dam, Wis.

the opposite end and the electric current actually heats the metal in the pipe.

It may be necessary to do some experimenting to find the correct amperage for different lengths and diameters of pipes. Longer and larger pipes will require heavier currents. Except for very short lengths of pipe, a 100 amp. welder or larger would probably be required.

These outfits must be used intelligently. Heating the pipe puts a direct short circuit on the welder and might burn out the machine if the contact were maintained longer than the rated period of the welder. This may be one-half hour or less. The method is very convenient and is safe when used by an operator who understands his equipment.

Motor for Small Corn Sheller

▶**Question:** *I would like some information on how to install a small motor on a one hole corn sheller.*
J. K., Ill.

▶**Answer:** One of the best methods of installing a small motor on a one hole corn sheller is shown on page 17 of our August issue. You can use a piece of broomstick for the round rail on the motor and two strips of one inch material attached to the platform will hold the motor in position. Place the motor so the bottom of the belt is the side which does the pulling.

Barn Ventilating Fans

▶**Question:** *I want to install a ventilating system in a barn. I would like to get a complete exhaust fan and an automatic shutter and have the fan controlled by a thermostat.*

I have been told exhaust fans are not available now. Is this so? If not, where could I get something in this line? If the above is not available, can I buy a propeller to fit on a ¼ hp. motor and build my own fan?
R. O., Ill.

▶**Answer:** Your best chance to buy an exhaust fan for your barn is to secure it from your local dealer. By local, I would mean, say, the nearest city of 25,000. Some dealers still have a stock of fans on hand and are permitted to sell them.

If you were to buy a fan from a manufacturer, you would need a priority to make the purchase.

You can obtain plans for making home-made wooden propeller type blades for your motor from Ohio State University, Department of Agricultural Engineering, Columbus, Ohio. The price is 15c. This would not be an efficient type of ventilating fan, but might do in an emergency.

I would suggest that you get in touch with your power company rural service engineer, and ask him if he knows where you can buy a fan and thermostat.

DE LAVAL SERVICE

DE LAVAL is doing its best to speed the war effort. More milk, cream and other dairy products—our most essential foods—are being produced in less time, with less labor on thousands of farms, with De Laval Milkers and Separators . . . De Laval factories are doing important precision war work as well as making as many standard De Laval products as our Government desires us to do . . . De Laval Dealers everywhere are servicing and reconditioning users' machines . . . Fortunately De Laval Milkers and Separators are quality-made for long service—they are the world's best—easy to adjust and recondition . . . If you do not know the name of your dealer, write nearest office below

World's BEST Milkers and Separators

THE DE LAVAL SEPARATOR CO.

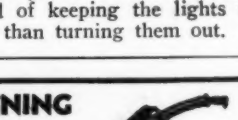
New York 165 Broadway | Chicago 427 Randolph St. | San Francisco 61 Beale St.

Egg Production

. . . . . (Here from page 13)

throwing the flock off schedule. Some experimental work is in progress on the use of infrared rays of low visual intensity which would have a stimulating effect and still comply with blackout requirements. This is still in the study stage and no recommendations can be made definitely, at present. The third and surest method is to use light-traps similar to those described in the September issue of ELECTRICITY ON THE FARM, which will keep the light in and at the same time provide for ventilation; or for the relatively short periods when they would have to be used, blackout curtains would keep the light in and do little injury to birds or litter. With increased war demand for both market and hatching eggs, the job is to choose the best method of keeping the lights in rather than turning them out.

NEW COOLER, EASY RUNNING COW CLIPPER—*World Famous* STEWART CLIPMASTER



Over 90% of the world's clipper users own and PREFER STEWART clippers. New anti-friction tension control assures perfect tension between blades for cooler, lighter running—faster, easier clipping. Makes blades stay sharp longer. **The most powerful clipper of its kind ever made.** Lasts longer. Fan-cooled, ball-bearing motor exclusive Stewart design. Completely insulated in the special **EASY-GRIP** handle barely 2 inches in diameter. The finest, most enduring clipper ever made for cows, horses, dogs, mules, etc. *A* $25.00 *value for only* $21.95 complete. Slightly higher West of Denver. 100-120 volts. Special voltages slightly higher. At your dealer's. Send for FREE catalog of Stewart electric and hand-power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, Dept. 30, 5600 Roosevelt Road, Chicago, Ill. *Over Half a Century Making Quality Products.*

New Publications

(Publications are obtainable from the addresses given in the descriptions. Some states make small charges for bulletins sent outside the state.)

• PORCELAIN PROTECTED WIRING SYSTEMS. 32 pp., illus. Free. Porcelain Products, Inc., Findlay, O. An installation manual and data book on knob and tube wiring with porcelain boxes, switches, etc. War code changes, specifications, etc.

• MEAL PLANNING. 16 pp. Free from Westinghouse dealers or West. Elec. & Mfg. Co., Mansfield, O. A war book on what to do about health. Vitamins, how to save them in cooking, how to judge, prepare and cook foods, vitamin and mineral charts.

• WARTIME GUIDE TO BETTER HOMES. 25 pp., illus. The Celotex Corp., 120 S. LaSalle St., Chicago. What you can and cannot do under WPB Order L-41 in the home and in farm buildings. FHA financing available; amount; how. Suggestions for reconditioning, added rooms, insulation.

• WARTIME CONSERVATION SUGGESTIONS (Steel). Republic Steel Corp., Cleveland, O. Also from local Republic dealers. A 16 p. illus. booklet on making steel building sheets, steel fences, etc., last longer. Covers repairs, painting, rust stopping, lightening protection, care of motors, tools, tires.

• FACTORS AFFECTING TEMPERATURES IN SOUTHERN FARM HOUSES. U. S. D. A. Technical Bul. No. 822, 78 pp., illus. 15c from Supt. of Documents, Washington, D. C. Studies on type of construction for winter warmth and summer coolness. Heat loss through walls, attic ventilation, effect of painting, concrete floors.

• KEEPING THE BLACKOUT OUTSIDE YOUR HOME. 16 pp., illus. Westinghouse Lamp Division, Bloomfield, N. J. A "How to do it" and "What it costs" bulletin on blacking out the home. Lists blackout materials, paints, etc. Shows methods of lighting and ventilating to keep all the light inside. From Westinghouse dealers.

○ LUMBER-BUILT FARM EQUIPMENT. 56 pp. with many plans and illus. Weyerhaeuser Sales Co., Saint Paul, Minn. A plan book for making some 30 items of labor-saving equipment from available sizes of lumber including such items as self-feeders, electric pig brooder, self-cleaning hen's nests, chick sun parlor, range shelter for poultry, lambing pens, gates, farm bench, etc.

• WINTER TRAFFIC SAFETY. 22 pp., illus. National Safety Council, 20 N. Wacker Dr., Chicago. This is an educational bulletin to help save your skin and property by pointing out facts and figures on safe winter driving practices, stopping distances for different road conditions, etc. Winter roads are hazardous. New cars and doctors are scarce in wartime.

• CORNELL WAR EMERGENCY BULLETINS. Excellent, specific 4 p. bulletins that say a lot in a few words and illustrations. Bul. 512, How to Put Out a Fire (kinds of fires and kinds of extinguishers); Bul. 509, Fire Prevention on Farms; Bul. 511, Lubrication of Farm Machinery; Bul. 519, Milking Machines, Washing and Care; Bul. 505, Save Labor in Growing Crops. Cornell University, Ithaca, N. Y.

• Service Manual for Deming Water Systems. 68 pp., illus. The Deming Co., Salem, Ohio. A wartime "Keep 'em pumping" manual with cut-away illustrations of each Deming pump showing construction and how to make repairs, oil and correct pump troubles such as water-logged tank, vacuum knock, water hammer, loss of prime, pipe friction, wire sizes, "trouble shooting" with vacuum gage.

• FARM MACHINERY—Third Edition. 524 pp., illus. $3.25. John Wiley & Sons, Inc., New York City. A clearly written book on the construction, use, repair and troubles of farm machinery by Prof. Archie Stone of the N. Y. State Institute of Agriculture. Has chapters on plows, harrows, grain-seeding machines, row-crop seeders and planters, cultivators, mowers, binders, fertilizer distributors, threshers and combines, potato machinery, and eight chapters on tractors. Written for farm or school use.

★ ***Buy War Bonds*** ★

They Do Brood Turkeys

The Buxtons Tell of Many Years of Experience with Electric Brooders

Many years ago we hired an electrician to build us four 500-chick electric brooders. My, what a saving in time and labor, and our chicks were much more uniform and far safer and cleaner.

Five years ago we bought 325 turkey poults. Everyone we talked to said we could not successfully brood turkeys with electric brooders; but we took a chance. We sold 312 fine turkeys. Our brooding cost was little, if any, higher than the coal brooding cost had been, and we could sleep all night without looking at them. Each year since then we have increased our flock, and each year added some new electric brooders.

This past year we replaced the home-made brooders with new brooders and raised 2,200 poults under eight brooders at an exact electricity cost of $12.92.

This year when the hatchery man arrived with our poults, he looked astonished and said, "O, gee, you can't brood turkeys under those brooders." My husband told him we had used similar ones for four years. He left our poults, reluctantly, but when he arrived with the second half a week later, he agreed that we were doing an excellent job, and it was only a part-time job at that.

We use an electric alarm clock to turn our lights on in the brooder house in the early morning. We also use electric elevators, shell our corn by electricity, keep our egg room cool in summer with a fan, and do many other jobs with electricity.

Of course we have running water and lights in all the brooding rooms and in our home and barn. We also have the essential electric helpers in our home.

MRS. MAURICE BUXTON
R 2, Molalla, Ore.

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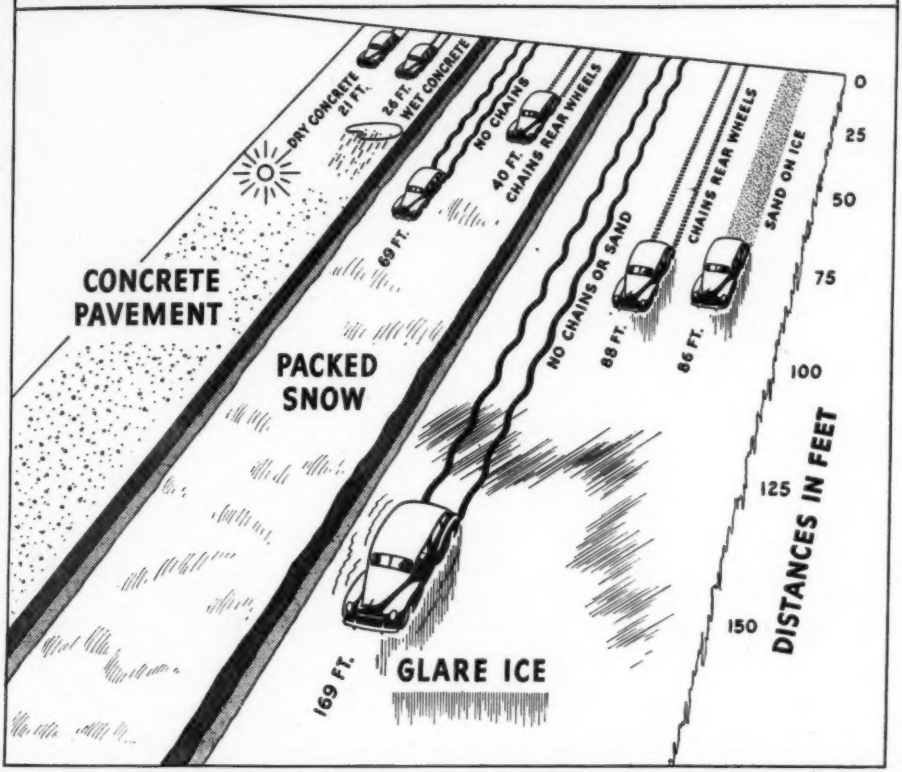

Above chart, based on National Safety Council tests, illustrates what drivers may anticipate according to various road conditions, with and without safety precautions. Consider it carefully if you must drive this winter. It may save your life, prevent costly property damage and traffic tie-ups harmful to war production. Essential transportation is "Vital to Victory," and remember, "Accidents help the Axis." Dedicating the new Medical Center at Bethesda, Md., President Roosevelt said: ". . . any civilians in the U. S. who, through reckless driving or through failure to take proper safety measures in industrial plants, kill or maim their fellow citizens, are definitely doing injury to our sons and brothers who are fighting this war in uniform."

INFORMATION SERVICE

As a reader of ELECTRICITY ON THE FARM you are entitled to our information service free of cost. Here is how it works.

Whenever you are seeking information about any equipment or application for electricity, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank at right to tell us your problem and we will see that you get the information you want. That's all there is to it. Easy, simple, and it costs absolutely nothing.

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To Our Farm Friends

SINCERELY we wish our good farm friends a Christmas as merry as the times will allow and we hope that before the New Year has rolled its course "Peace on Earth, Good Will Toward Men" will again reign throughout the world.

We like to look back, too, and to believe that this publication together with the friendly advice of our representatives have been of some help to you.

We hope you will not hesitate to call whenever you have some special electrical problem. We want to serve you to the best of our ability.

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